

[0024] In the embodiments illustrated in FIG. 2A-2B and 2D, the light-emitting device 260 is placed against the bottom surface 220a and proximate to a side edge 220b of the light-guide plate 220. To prevent light leakage at the periphery of the light-guide plate 220, the side edge 220b can include an edge reflection part 222 configured to reflect light 226 from the light-emitting device 260, as described in details in FIG. 2E and 2F.

REMARKS / ARGUMENTS

This Amendment and Response to Office Action is filed in response to the Office Action of January 13, 2005.

Presently, the drawings and specification are objected to for including improper reference numeral description. These objections are overcome by ways of the amendments to the drawings and specification accompanying this filing.

In addition, claims 1-2, 9 and 14 stand rejected under 35 U.S.C. §102(b) as being anticipated by US Patent No. 5,769,521 issued to Osawa et al. ("Osawa et al." hereafter). Claims 3-5, 8 and 13 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Osawa et al. Claim 6 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Osawa et al. in view of US Patent No. 5,166,815 issued to Elderfield ("Elderfield" hereafter). Claim 7 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Osawa et al. in view of US Patent Application Publication No. 2001/0003504 to Ishihara et al. ("Ishihara et al." hereafter). Claims 10-12 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Osawa et al. in view of US Patent No. 6,068,381 issued to Ayres ("Ayres" hereafter). Claims 15-18 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Ayres in view of US Patent No. 5,550,715 issued to Hawkins ("Hawkins" hereafter). These rejections set forth in the outstanding Office Action are overcome and/or traversed for the reasons stated below.

**I. REJECTION OF CLAIMS 1-2, 9 AND 14 AS BEING ANTICIPATED BY
OSAWA ET AL.**

Claims 1, 2, 9 and 14 stand rejected under 35 U.S.C. §102(b) as being anticipated by Osawa et al. The Applicants respectfully traverse this rejection.

Amended independent claim 1 recites, *inter alia*, that the frame body is provided with contact pads connecting to the light-emitting device and is configured to assemble the liquid crystal panel with the backlight assembly. One advantage of this claimed structure is that because the light-emitting devices are directly connected on the frame body assembling the liquid crystal panel with the backlight, positioning of the light-emitting devices relative to the liquid crystal panel can be accurately accomplished without misalignment problems.

In contrast, Osawa et al. discloses a backlight assembly in which the frame provided with the contact pads connecting the light-emitting device is configured to assemble with the light guide plate. See col. 3, lines 22-25: "*The aforementioned engaging means 13 for engaging and holding the light source device 12 to the light-conducting plate 11...*" Therefore, Osawa et al. fails to teach or suggest the claimed backlight assembly in which the frame body embeds contact pads for connection to the light-emitting device and, additionally, is configured to assemble the liquid crystal panel with the backlight assembly.

For at least the foregoing reasons, the Applicants believe that claim 1 patently distinguishes from the cited reference. Accordingly, withdrawal of the anticipation rejection to claim 1 is respectfully requested.

Based on at least the same reasons, it is submitted that claims 2, 9 and 14 dependent upon claim 1 also patently distinguish from Osawa et al. Withdrawal of the rejection to these claims thus is respectfully requested.

II. Rejection of Claims 3-5, 8 and 13 as Being Unpatentable Over Osawa et al.

Claims 3-5, 8 and 13 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Osawa et al. The Applicants respectfully traverse this rejection.

At least by virtue of their respective dependency on patentable claim 1, claims 3-5, 8 and 13 should also be patentable over Osawa et al.

III. Rejection of Claim 6 as Being Unpatentable Over Osawa et al. in View of Elderfield

Claim 6 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Osawa et al. in view of Elderfield. The Applicants respectfully traverse this rejection.

Elderfield discloses a backlight assembly in which the light-emitting device is soldered to a circuit substrate. See col. 4, lines 1-2: "*A row of light-emitting diodes (LEDs) 46 machine-soldered to the substrate project up into the underside of diffuser 42...*" Neither Elderfield nor Osawa et al. teaches a backlight in which the light-emitting device is connected to contact pads embedded in a frame body that is configured to assemble the liquid crystal panel with the backlight assembly. For at least the foregoing reasons, claim 6 dependent upon claim 1 should patentably define over the combined references. Withdrawal of the rejection to claim 6 thus is respectfully requested.

IV. Rejection of Claim 7 as Being Unpatentable Over Osawa et al. in View of Ishihara et al.

Claim 7 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Osawa et al. in view of Ishihara et al. The Applicants respectfully traverse this rejection.

Ishihara et al. teaches a backlight structure in which the light source is mounted and electrically connected between the substrate and the light guide plate. See paragraph [0039]: "*The LED chip 3 is mounted on the substrate 4 with the second electrode 30b held in direct electrical contact with the terminal 40*"; paragraph [0041]: "*The light guide panel 2 is mounted on the liquid crystal panel 1 and the LED chip 3 with the transparent electrode 24 held in direct contact with the electrode 30a of the LED chip 3 for electrical connection.*" Ishihara et al. like Osawa et al. thus fails to teach or suggest a backlight in which a frame body is provided with contact pads connecting to the light-emitting device and additionally is configured to assemble the liquid crystal panel with the backlight assembly. For at least the foregoing reasons, claim 7 should patentably distinguish from Osawa et al. and Ishihara et al. Accordingly, the Applicants respectfully solicit the withdrawal of the rejection to claim 7.

V. Rejection of Claims 10-12 as Being Unpatentable Over Osawa et al. in View of Ayres.

Claims 10-12 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Osawa et al. in view of Ayres. The Applicants respectfully traverse this rejection.

Ayres discloses a backlight in which the light-emitting device provided with electrical leads is mounted within a frame pocket of the backlight. See col. 5, lines 1-13: "*the lamp member 52 is received in the pocket 40 of the frame with the lamp member 52 aligned with the inner opening 42 and supported in the pocket on the longitudinal leg portions 64 which are seated on the seat portions 50*". In Ayres, the electrical leads 58, 60 extend from the body 52 of the light-emitting device 16 outside the frame body 12 of the backlight. See FIG. 1, col. 5, lines 9-11: "*the connecting portions 66 of the terminals 58, 60 extend rearward, out through the rear opening 48 for connection with electric contact means...*"

Ayres does not teach and suggest a frame body that embeds contact pads for connection to the light-emitting device and is configured to assemble the liquid crystal panel with the backlight, as taught in amended claim 1. Consequently, Ayres also fails to teach or hint that the contact pads embedded in the frame body can include resilient bent portions, as recited in claim 11. For at least the foregoing reasons, the Applicants believe that claims 10-12 patently define over Osawa et al. and Ayres. Withdrawal of the rejection to claims 10-12 thus is respectfully requested.

VI. Rejection of Claims 15-18 as Being Unpatentable Over Ayres in View of Hawkins

Claims 15-18 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Ayres in view of Hawkins. The Applicants respectfully traverse this rejection.

Amended claim 15 recites a frame structure comprising: a frame body configured to assemble a liquid crystal panel with the backlight assembly, and a plurality of contact pads embedded in the frame body, wherein the contact pads externally connect to a power source and are configured to receive the mount of one or more light-emitting device.

As discussed above, Ayres fails to disclose and suggest a frame body that embeds contact pads for connection to the light-emitting device and is configured to assemble the liquid crystal panel with the backlight assembly.

On the other hand, Hawkins teaches the general structure of a light source, being comprised of light-emitting elements such as LEDs connected to a battery, which is mounted at a side of the display panel. See col. 2, lines 51-54: "*the light source 107 comprises at least one light emitting element 109 and a battery 111 electrically connected to illuminate the light emitting element 109.*" Hawkins is silent as to the detailed structure of the light source 107, and like Ayres fails to disclose or suggest a frame structure in which a frame body embeds contact pads that receive the mount of light-emitting devices and is configured to assemble the liquid crystal panel with the backlight. For at least the foregoing reasons, claim 15 and related dependent claims 16-19 should patently distinguish from the cited references. Accordingly, the Applicants respectfully request the withdrawal of the rejection to claims 15-19.

CONCLUSION

For at least the foregoing reasons, it is believed that all of pending claims 1-19 of the present application patently define over the prior art and are in proper condition for allowance. If the Examiner believes that a telephone conference would expedite the examination of the above-identified patent application, Examiner is invited to call the undersigned. Because this

filing is submitted within the three-month deadline, no Petition for Extension of Time is required. In connection to the additional fees required for the additional claims, the Commissioner is authorized to deduct from **Deposit Account No. 02-0400 (Baker & McKenzie)**. **When identifying such a withdrawal, please use our Attorney Docket No.: AUO-101.**

If the Examiner has any questions regarding this filing or the application in general, the Examiner is invited to contact Applicant's attorney at the below-listed address.

Respectfully submitted,

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David I. Roche, Reg. No. 30,797